

Notice of Allowability

Application No.

10/604,640

Examiner

John P. Fitzgerald

Applicant(s)

GANESAN, KRISHNAMURTHY

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☒ The allowed claim(s) is/are 1-29.
3. ☒ The drawings filed on 06 August 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 8/6/03; 8/18/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

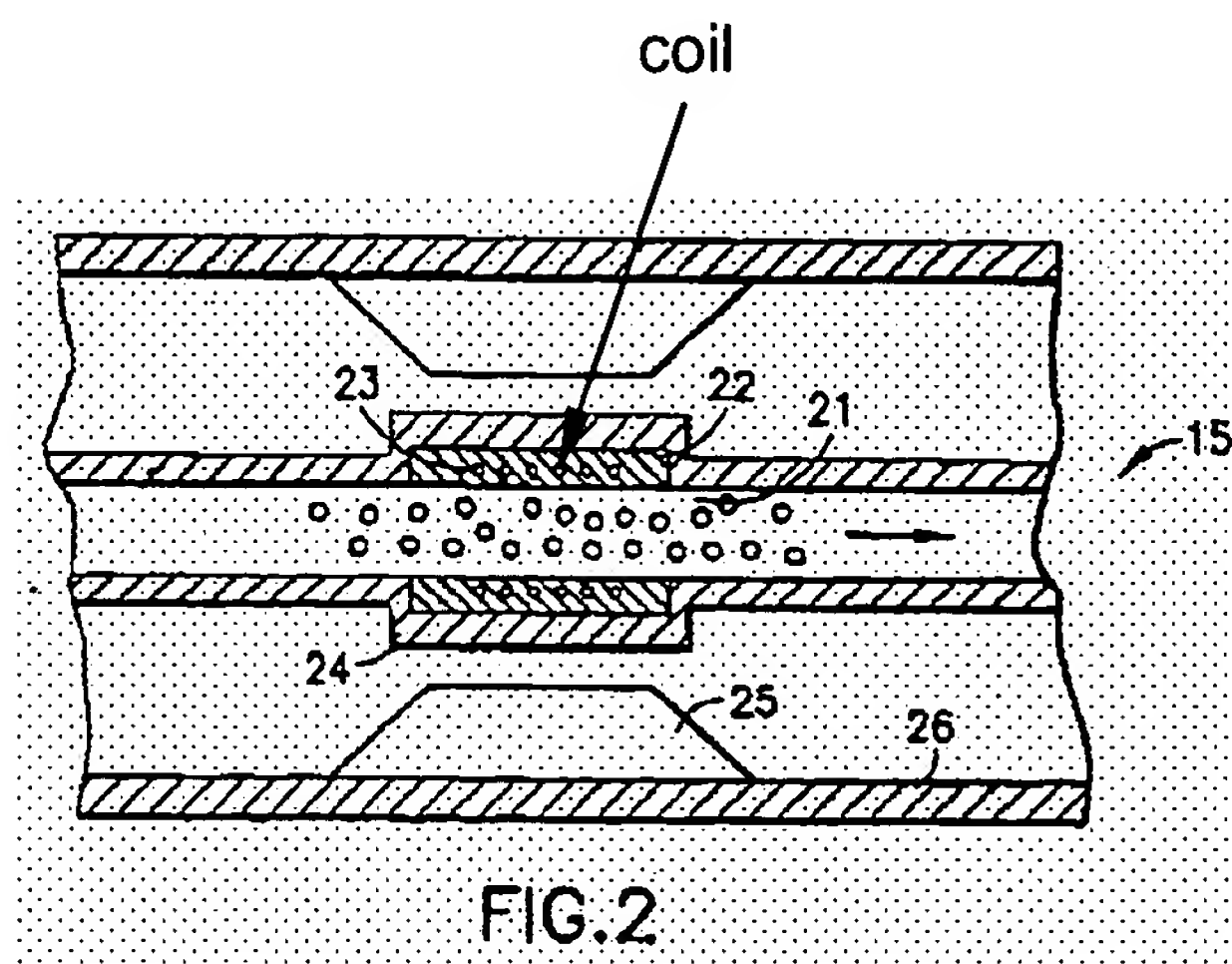
Allowable Subject Matter

1. Claims 1-20 are allowed over the Prior Art of record.
2. The following is an examiner's statement of reasons for allowance: For the independent claims 1, 17 and 19, the primary reasons for allowance is the inclusion of the method step limitations of determining the resistivity and/or dielectric constant (note: resistivity is the reciprocal of impedance and is directly related to conductivity) of formation fluids surrounding an earth borehole by providing a coil (i.e. wire windings), determining/measuring a reference quality factor (i.e. dielectric constant) factor of the coil; disposing the coil in the borehole and causing the formation fluid to flow axially therethrough; determining/measuring the quality factor of the coil with the formation fluid within the coil; and then determining the resistivity and/or dielectric constant of the formation fluid within the coil as a function of the determined/measured quality factor and the reference quality factor.

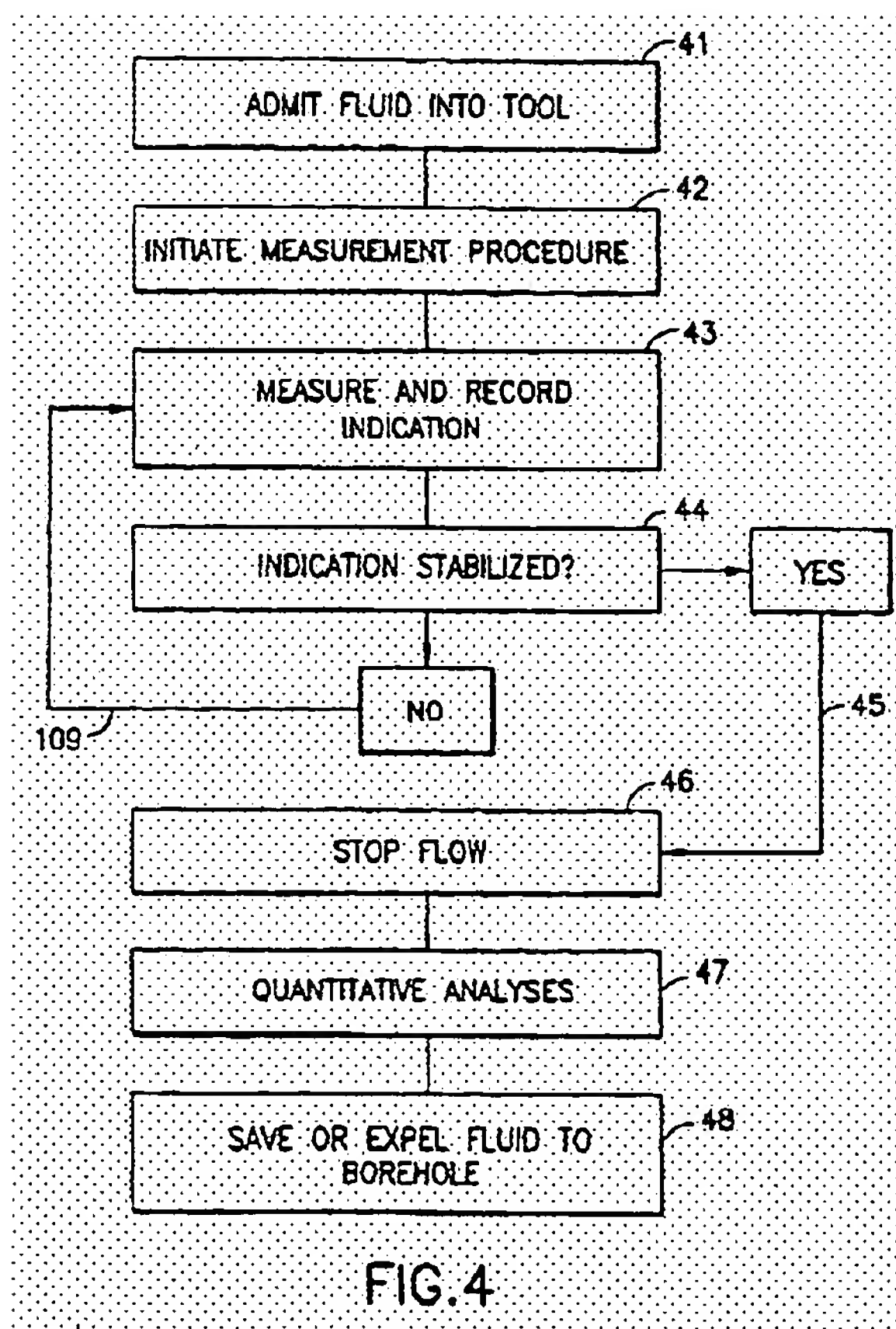
All the Prior Art teach the measurement of the resistivity or electrical properties of formation fluid by employing coils and having the formation fluid pass axially through the coils, however, the coils "excite" (i.e. magnet resonance imaging) aspects of the formation fluid, and in turn, pick-up/measure the signals induced in the formation fluid either with the same coil or additional coils spaced from one another. An example of this, and which is considered the closest Prior Art example by the Examiner, is US 6,825,657 to Kleinberg et al., which discloses a method/apparatus (see Figs. 2 and 4 below) for determining the resistivity of formation fluids employing a coil, however, there is not reasonable modification or teaching, alone or with another Prior Art reference, to employ the "quality factor" of the coil itself to determine the

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resistivity of the formation fluid, as in the instant application, employing a "reference quality factor" and a "measured quality factor" (i.e. with the fluid located within the coil).



Kleinberg et al.



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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

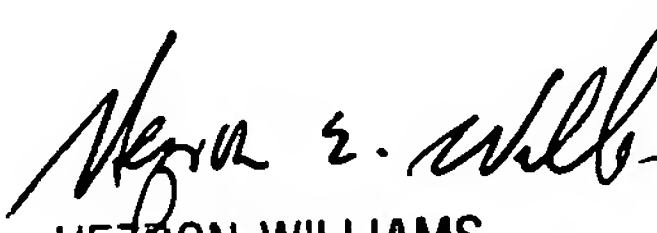
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Applicant is invited to review related Prior Art listed on PTO form 892.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Fitzgerald whose telephone number is (571) 272-2843. The examiner can normally be reached on Monday-Friday from 7:00 AM to 3:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams, can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JF

05/06/2005



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